2: Jochelson E-5 (1884-1902) 1933 Yakut

mixed with Iron Age objects. One may therefore surmise that places abandoned in the neolithic period were later occupied by iron workers. In the Irkutsk District Professor Petri discovered a genuine iron (not mixed with other metals) age site in the valley of the Murina River, a tributary of the Kuda, which empties into the Angara River. Remains of earth huts similar to those of the present Yakut were found. The people were cattle breeders as was evidenced by the bones of oxen. Here were also found fragments of pottery, slag, furnaces, pipes, and a prehistoric mine shaft leading to layers of iron ore.

On one site was discovered part of a clay furnace about two feet high and one and a half feet in diameter, above which were alternating layers of iron ore and charcoal. The mixture was fired and air was blown in from below through pipes by means of bellows. During the smelting process charcoal and ore were added from above. The metal thus obtained was removed by destroying the furnace. Remains of such iron foundries have been discovered as far west as the Minussinsk country, i.e., over the entire route alleged to have been traversed by the Yakut to reach the Lena Valley.

At present, iron mining is concentrated in different localities of Viliui and Yakutsk districts. Some *naslegs* of the Markhinsky and Verkhne-Viliuisk *uluses* in the Viliuit District are noted for their iron mining and smelting, as well as some *naslegs* of the East Kangalasky *ulus*, namely the clans living on the Small Batom and Tyukan rivers in Yakutsk District.

The present process of iron mining and smelting does not deviate from the prehistoric method described above. Iron is reduced to the metallic state, as described by Sieroszevski[1] and Maak[2] in jug-shaped furnaces 3 feet 8 inches high and 3 feet wide at their greatest width, which is usually about 14 inches from the base. The fire clay walls of the furnace are 1½ to 2 inches thick. The furnace is enclosed in a log framework filled in with clay to retain the heat and make it firm. In the lower part of the furnace is a damper for removing the pig iron. Before the operation the damper is closed and covered with a layer of clay. A fire is built and ore and charcoal placed in the furnace from above. The fire is kept burning by blowing on it with bellows and ore and charcoal are added fifteen to twenty times. After the pig iron is separated from slag and repeatedly heated and hammered, soft iron and occasionally steel is obtained. The Yakut prefer it to the imported

[1]Sieroszevski, *ibid.*, 381.
[2]Maak, *ibid.*

53: Tokarev and Gurvich E-4 (no date) 1964
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skillfully made; the wooden crockery was usually decorated with carving, while the birchbark objects were decorated with horsehair designs. 322

Fur-dressing and tanning were very common. The materials were made into a great variety of different things—clothing, footwear, and headgear; carpets, underlays (usually made of horse- or cow-hide, often sewn together from pieces into a checkered mosaic), blankets (from horseskin); the leather vessels were made in a variety of sizes, ranging from the enormous simiir' for kumys down to the tiny pail or tursuk; various parts of saddles, straps, nooses and so on. The actual working of the leather and fur was very primitive—the hide was smoked (in ancient times and even in the 17th century this was done in earth stoves), crumpled, smeared with oil or cream, and there was no true tanning. The manufacture of reindeer suede was evidently learnt from the Evenks and the Evens. The Yakuts themselves did not make any cloth, either from animal wool or vegetable fiber—and only used what was imported. They did not know about spinning, nor how to roll felt. On the other hand, horsehair was widely employed; it was used for the ornamentation of birchbark and other objects, particularly for braiding different kinds of lassoes, cord, laces and nets, loops, fans to keep flies away, stuffing pillows for saddles and so on. The Yakuts also wove horsehair for decorative purposes. The individual hairs were twisted into a thread by hand on a bare knee, without using a spindle. 281 286 283 439 531

Blacksmithery was the only trade among the Yakuts which had long acquired commercial importance, although normally it was not a separate trade from agriculture. In the 17th century the Russians found it to be highly developed among the Yakuts. The iron was obtained from marsh ore, of which there was a great deal, particularly on the Vilyuy. The ore was mined along the rivers Botoma, Amga, Sola and others. It was first smelted in primitive blast furnaces. But at the beginning of the 20th century the Yakut smiths were already working with imported iron. They forged it into a variety of implements and utensils, weapons and so on. Apart from iron, the Yakut smiths worked low-grade silver, which in the 19th and 20th centuries was partly obtainable by melting down Russian coins. This silver was made into various ornaments, linings for belts, whips, horse harnessing. The equipment used in the smithies was fairly unsophisticated—furnaces worked with bellows (portable), anvils, hammer and tongs. 326 [316] ●

The fact that they engaged in ceramics singles out the Yakuts from the people around them. They evidently retained pottery as a relic of the Neolithic stage. Nevertheless, it was very primitive. To the dark, viscous clay they used to add powder ground from old fired pots and then mold the clay mixture diluted with water into the walls of the pot with their hands (without a wheel), using a stone to smooth them out (on the inside) and a trowel (on the outside). The pots were fired in the hearth. The pottery varied in size and the shapes and designs were crude. In the last few decades, Yakut ceramics have been replaced by Russian ones. 323

Mammoth-ivory carving (Yakutiya is rich in mammoth skeletons), which was probably not begun before the 19th century, was not a common trade, although it was an interesting one. The ivory was carved into a variety of trinkets and small boxes. 321

These were the main types of production among the Yakuts prior to the Revolution. As a whole, the Yakut economy remained at a fairly low level of development, and by and large remained a subsistence economy. Nevertheless, the sale of homemade products acquired ever-greater importance towards the end of the 19th century. This was mainly the case 433 443

53:Tokarev and Gurvich E-4 (no date) 1964
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175 firm Arai Gumi. The Yakut people took up arms in defense of their young
648 Republic. In March 1923, with the help of the Red Army units, General Pepelyayev was crushed.

175 Even while the struggle against the Pepelyayev bands was still at its
631 height, in December 1922 there was held the first All-Yakut Constituent Assembly of Soviets; this conference elected a Central Executive Committee and Council of People's Commissars of the YaASSR. In 1923 the Constitution of the YaASSR was adopted at the Third All-Yakut Congress of Soviets. In 1937 a new Yakutiyan Constitution was drafted and on March 9 of the same year it was adopted.

Industry and Transportation

433 During the Five-Year Plans a major socialist industry was developed in Yakutiya. At the present time, in addition to the gold, nonferrous metal and mica industries, there are coal, shipbuilding, building-materials, printing and also fish and dairy industries in Yakutiya.

316 Gold was first mined in the regions bordering on Yakutiya (Vitim and Olekma Basins) more than 100 years ago. But in Yakutiya itself the gold was only mined in very small quantities. In 1923 a prospecting party fitted out by the Yakutiyan government, with the help of Yakut guides, discovered the huge gold deposits on the river Aldan. The Aldan immediately became a major gold-mining area. All around the Aldan there arose settlements, mines, and power stations. At the present time the Aldan mines use powerful electrodredges, conveyors, compressors, excavators and haulage machinery.

[317] The salt reserves of Kempendey along the tributary of the Vilyuy are being exploited on a wide scale.

Extensive prospecting has resulted in the discovery of dozens of new coal deposits. There is now a coal industry in Yakutiya. An example of the rapid development of the coal industry in Yakutiya is the Sangarskiy area. Gold was first mined in Sangary in 1928. During the first year of the mine's existence only 15 tons of coal were brought up, operations being conducted entirely by hand. Nowadays the mine is a large, well-equipped industrial enterprise. A mechanized system for loading the
[361] coal onto barges has been installed. The construction of houses and cultural facilities on a large scale has begun in the coal-mining regions. Sangary itself has become a miners' settlement and an industrial corner of Yakutiya.

313 Before the advent of the Soviet regime the very rich forest reserves of Yakutiya were hardly touched. The timber rotted where it stood, or else was destroyed by forest fire. At the present time forestry is a leading branch of the Yakut economy. Advanced Soviet machinery is used on a wide scale at the lumber camps. There are mobile power stations, and electric saws with power units. The forestry organizations have been provided with dozens of hauling tractors and trucks. Fully mechanized sectors have been set up. The timer is floated downriver by means of mechanical traction. Sawmills have been built.

47 Hundreds of industrial plants have been set up in Yakutiya during the
178 Soviet period. The manufacture of glass, bricks, building materials, refractory materials, furniture, leatherwares and footwear, provides for local needs.

433 In accordance with the planned development of the economy the Yakut
184 region has been divided up into specialized regions—coal mining in the